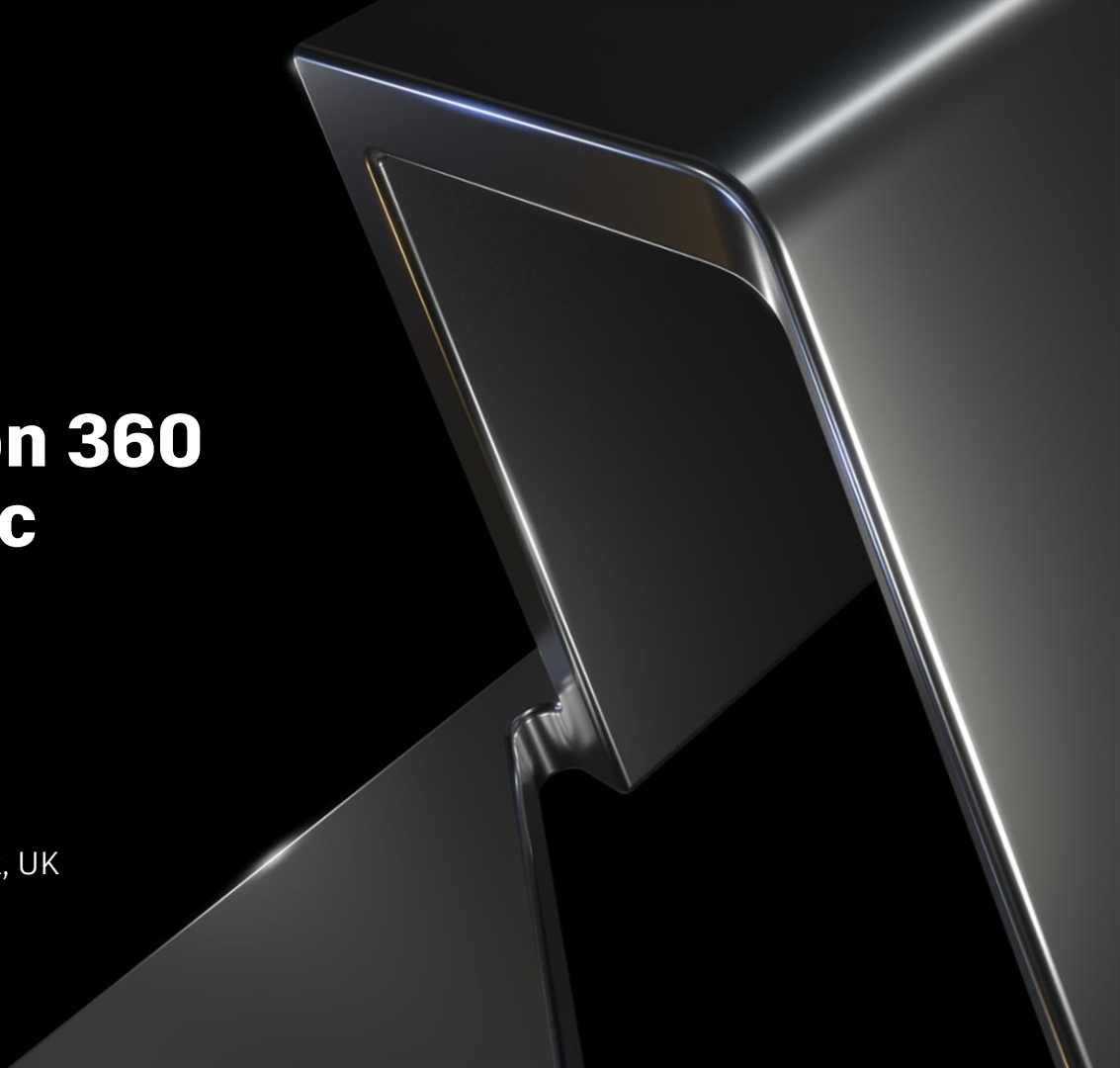


Teaching with Fusion 360 During the Pandemic

Elizabeth Bishop

Postgraduate Researcher, University of Warwick, UK

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About Me

Elizabeth Bishop



- 2012 – 2017 MEng Mechanical Engineering
- 2016 – 2017 UAV Group Project
- 2017 – 2021 PhD in Large-Scale Additive Manufacturing (3D Printing)
- Maker in Residence at Warwick Engineering Build Space



@LizBish94



@WEDesignMake



Elizabeth Bishop



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Learning Objectives

Objective 1

- Learn about online teaching and delivery of engineering using Fusion 360

Objective 2

- Learn about utilizing Fusion 360 collaboration tools

Objective 3

- Learn how to apply Fusion 360 for real-world engineering applications

Objective 4

- Learn about designing course content for university-level teaching

Who We Are

The University of Warwick

The School of Engineering



The University of Warwick has one of the leading unifying engineering schools in the UK. All our engineering disciplines are under the same roof – The School of Engineering, bringing an integrated teaching approach balancing the key branches of engineering. All our students have a common first year and specialize halfway through their 2nd year.



The Build Space Team



Dr Simon Leigh

Reader
Build Space Lead
Maker in Residence



Dr Chris Purssell

Teaching Fellow
Maker in Residence



Elizabeth Bishop

PhD Student
Maker in Residence

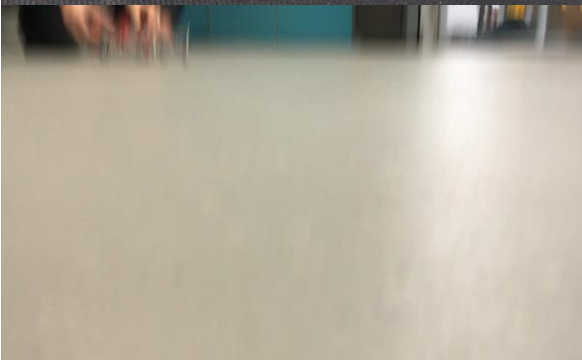
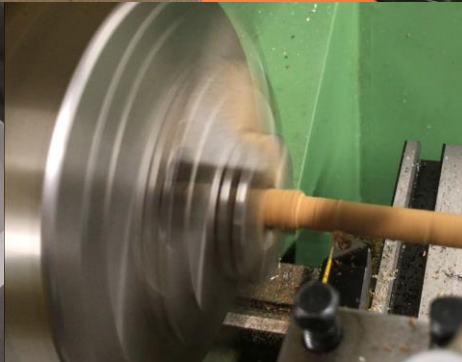


Elliott Griffiths

PhD Student
Maker in Residence

ENGINEERING BUILD SPACE





You may remember us from...

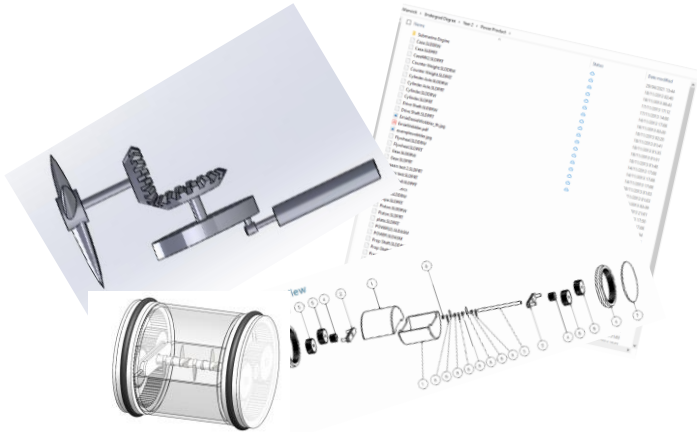


Our History with Fusion 360

Pre 2016-17



- Using a competitor product
- Installed on computer suites on campus
- Difficult to get on personal machines – a locked down Edu version available
- No Mac version
- Collaboration via email and USB sticks

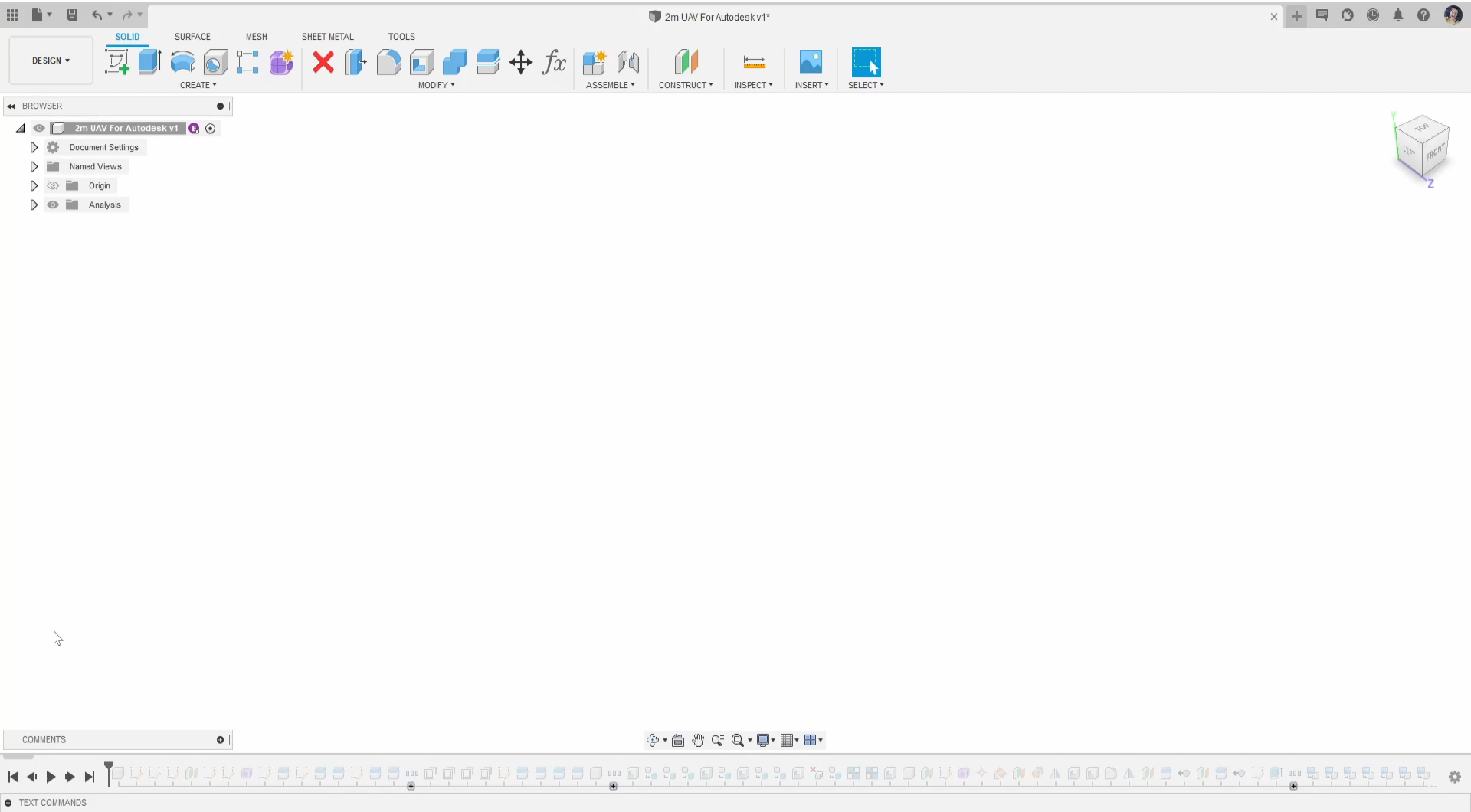


2016-17 Academic Year



- Tried Fusion 360 on some individual and group projects
- Started running 'Design Jams' to introduce students to Making beyond the timetable and using Fusion 360
- Trail was successful and moved towards using Fusion as our main CAD work package



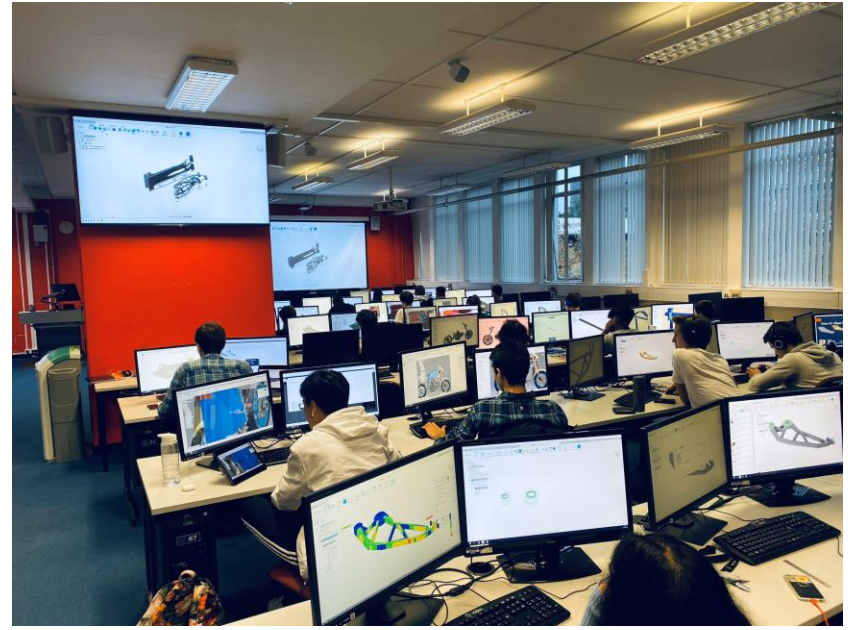


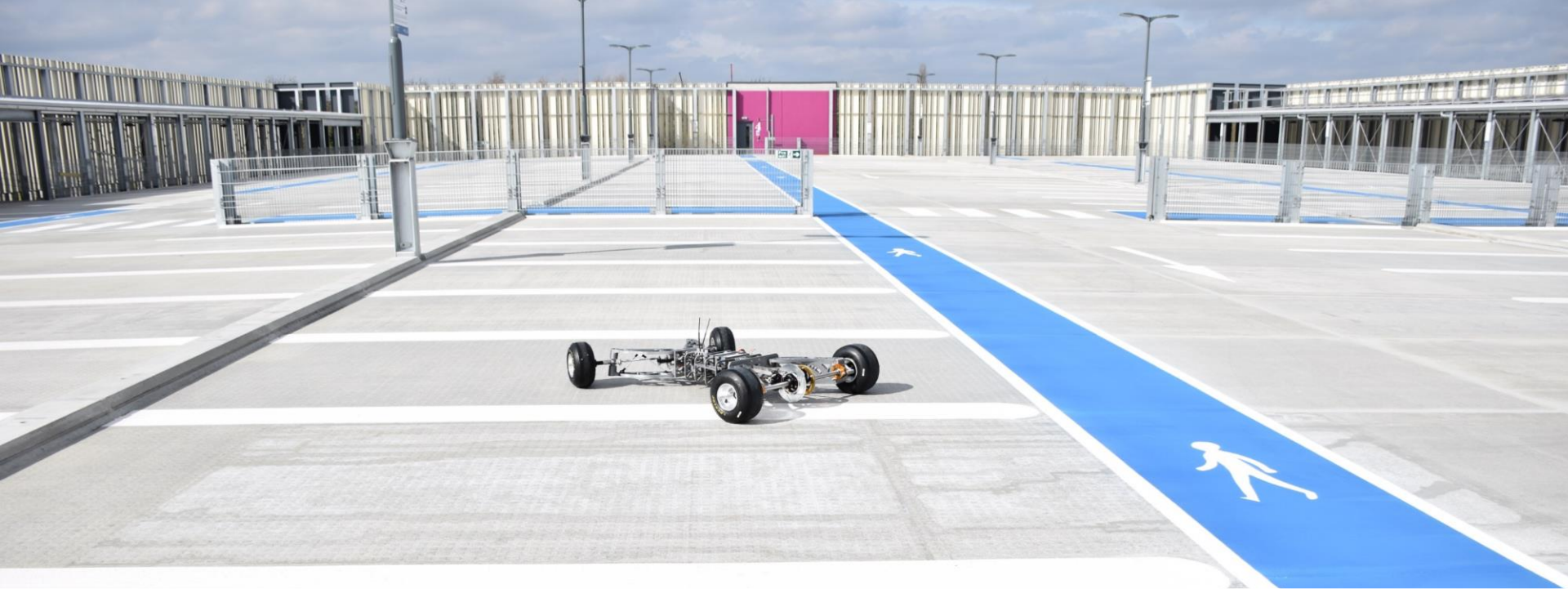
Previously...

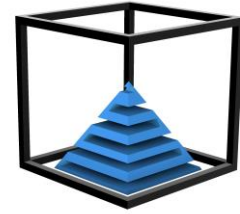
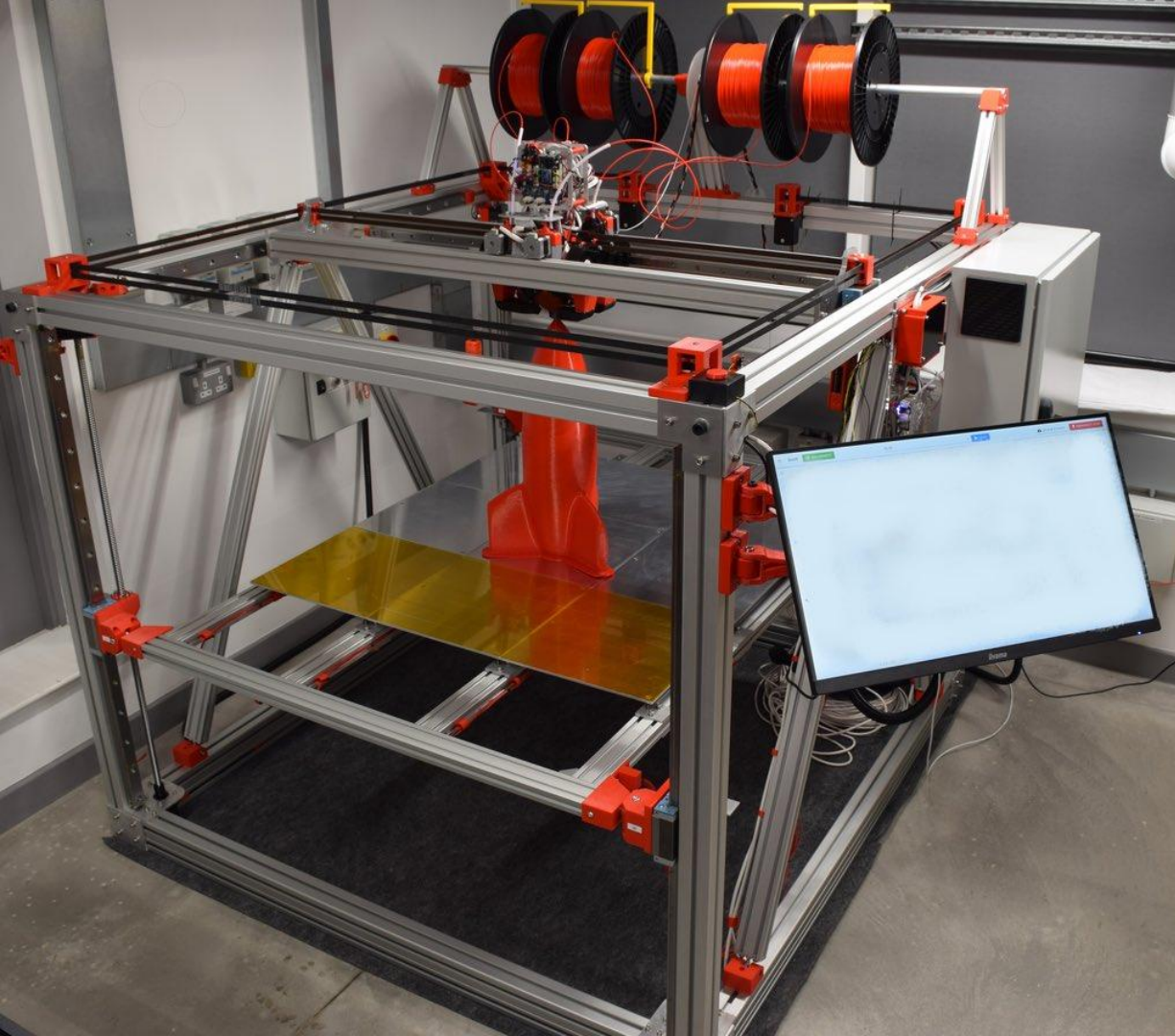
17-18 Academic Year



18-19 & 19-20 Academic Years



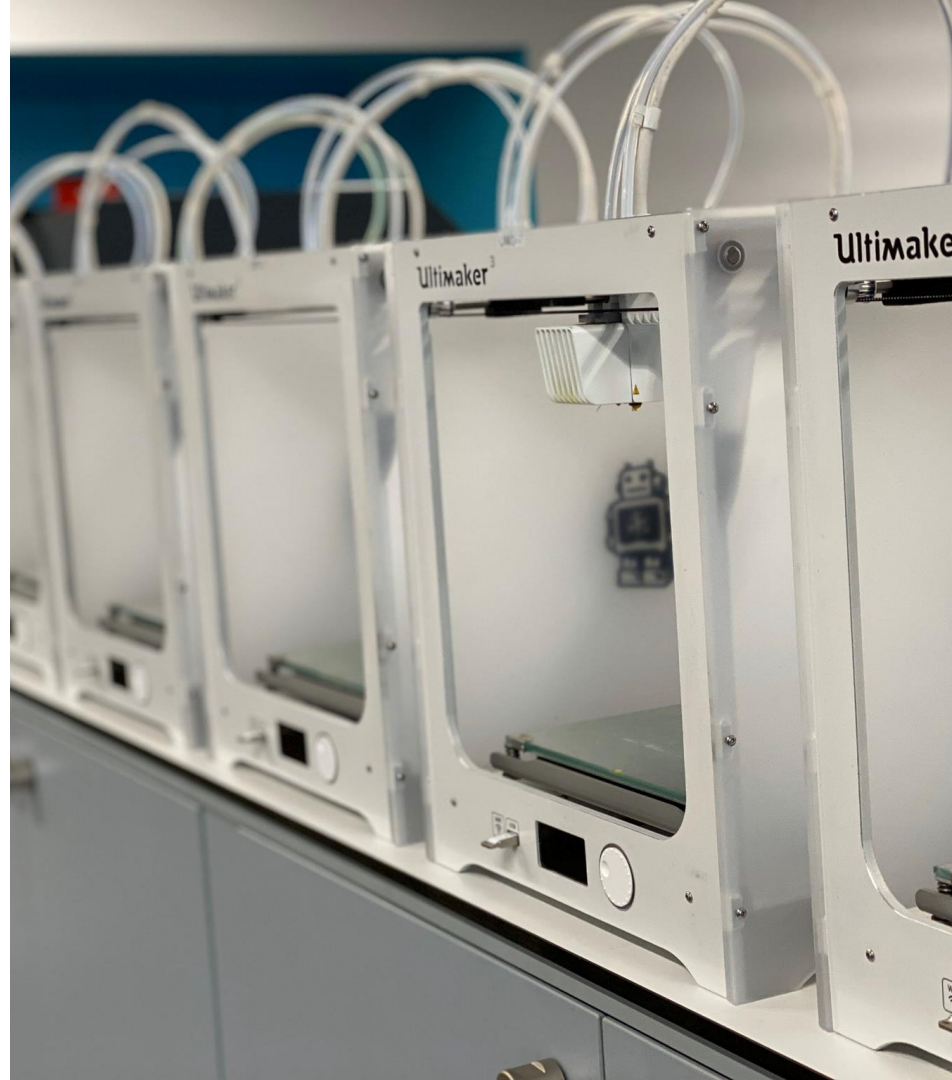




ENGINEERING BUILD SPACE



 @WarwickBAMF



A Locked Down Year...



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MOODLE DEMO

The Result

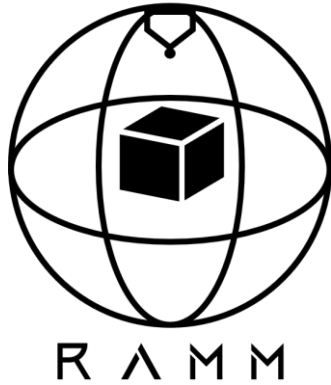
The Good

- Fusion 360 Teams has allowed us to collaborate well as educators
- Fusion is available on personal devices – Windows and Mac
- Easy platform to get the hang of
- We can be added into student projects where required
- Loads of additional content available for those students who want it

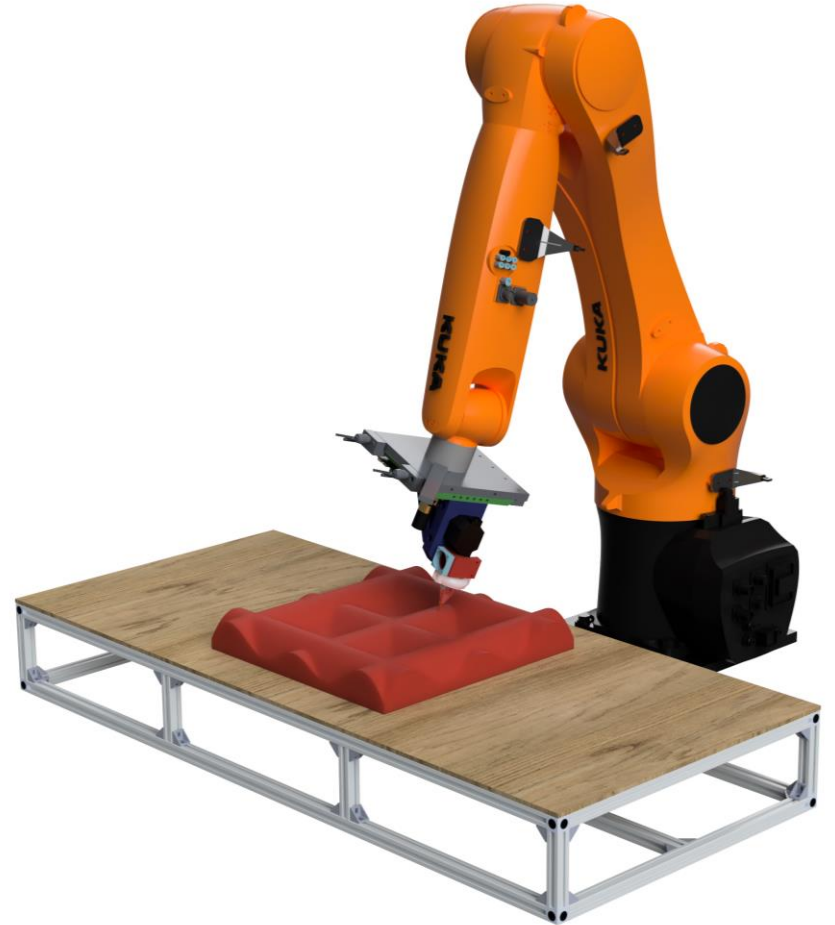
The Not So Good

- Difficult to monitor student progress when not physically present
- Did not (at the start of the year) run on ALL devices – had some students using Chromebooks
- Troubleshooting difficult when not physically present in front of the same screen

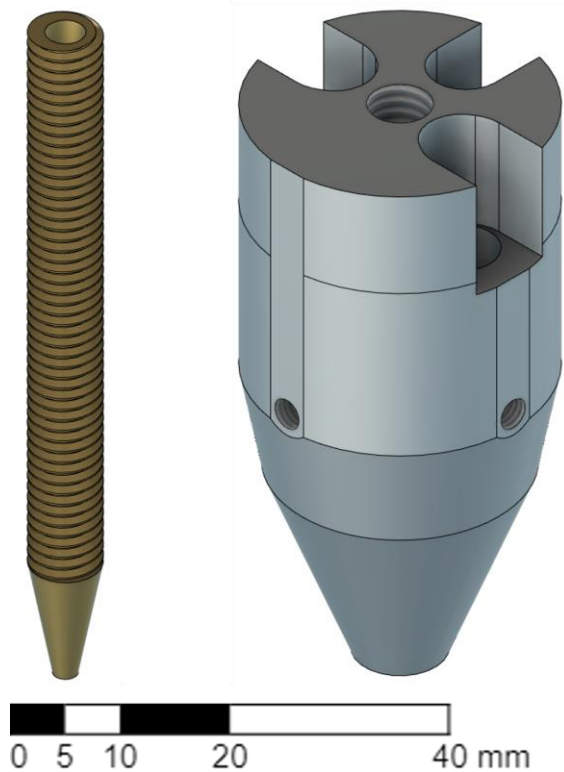
A Real-World Application



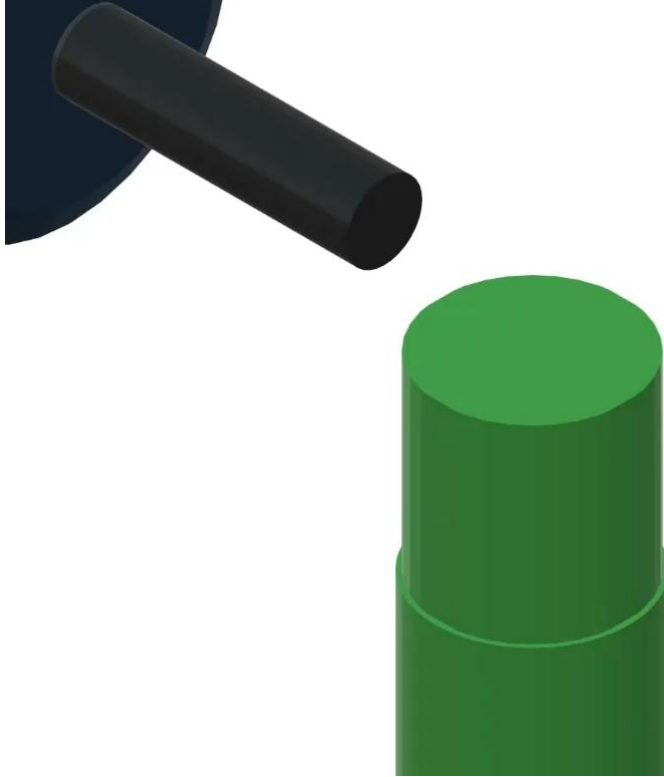
“Design and develop a system to perform Non-Planar Additive Manufacturing, with the use of a 6-axis KUKA robot arm.”



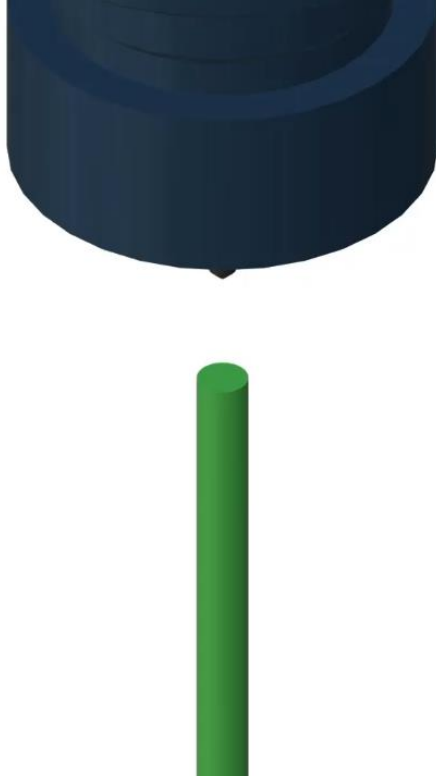
Custom Hot-End

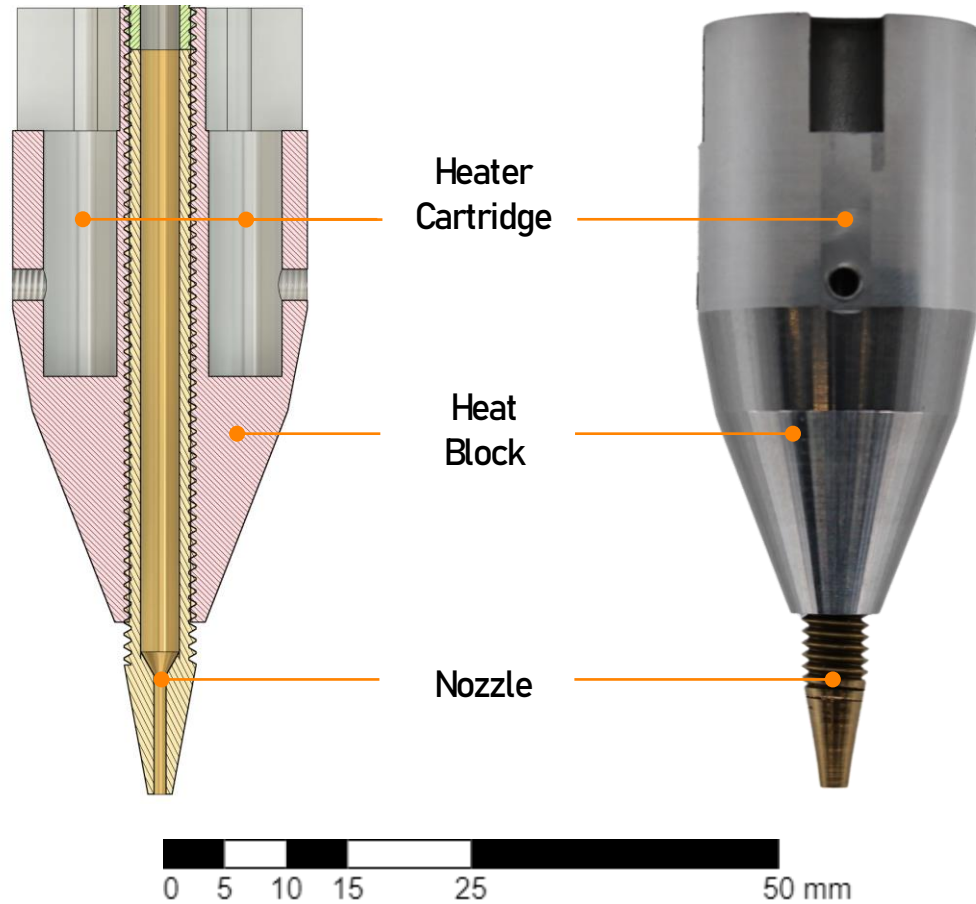


Heat-Block Manufacture

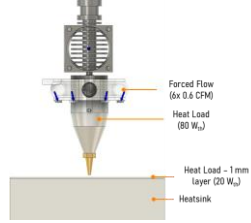
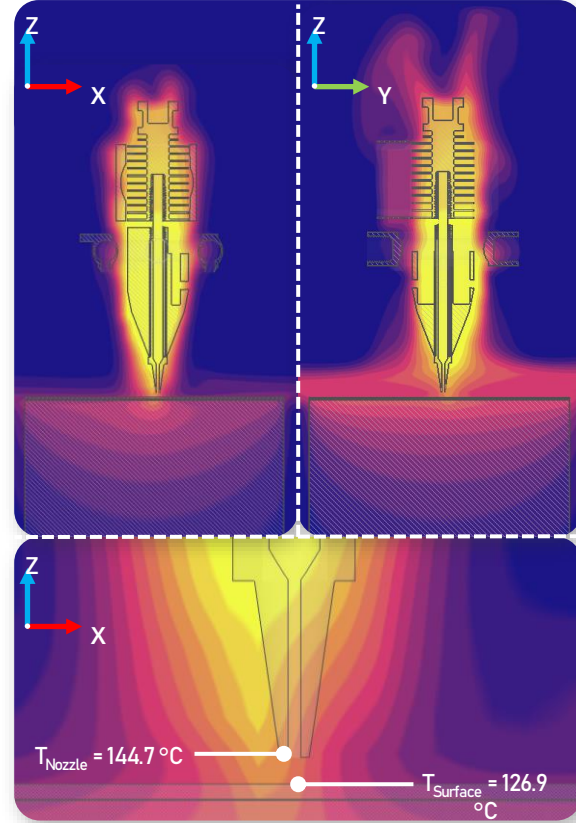
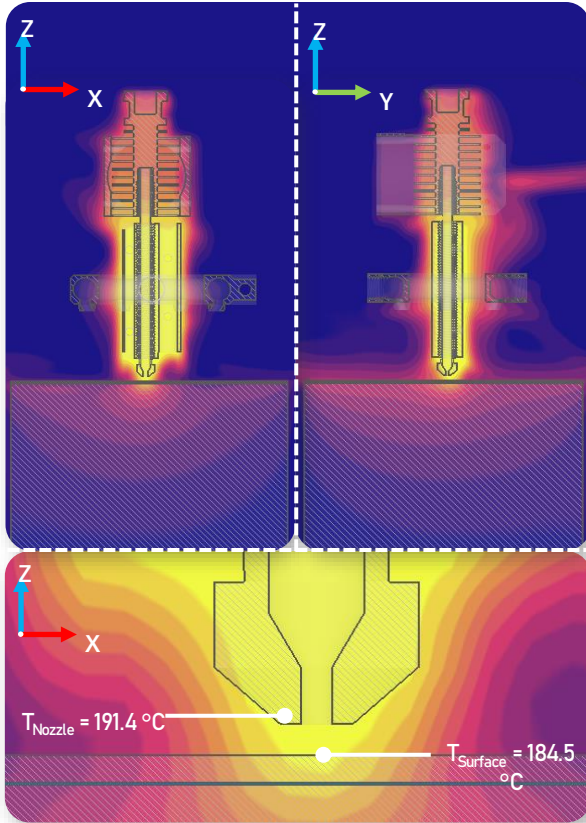
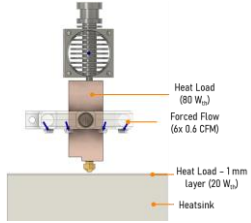


Nozzle Manufacture

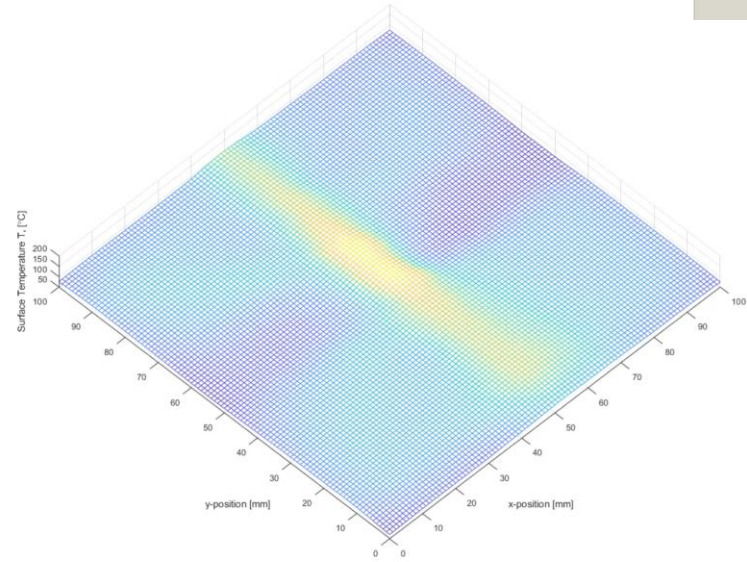
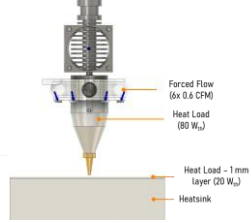
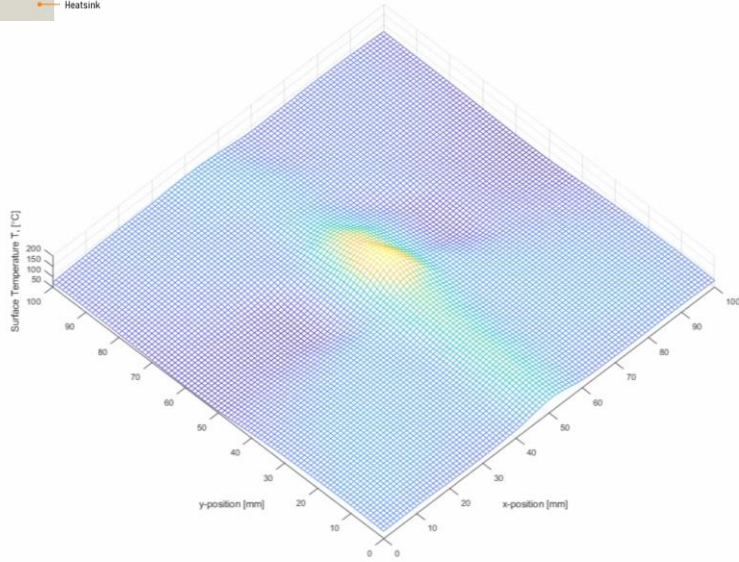
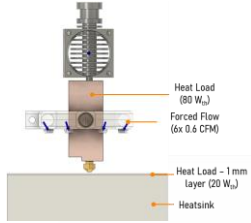




Print Cooling Simulations



3D Rotation of Surface Temperature



Conclusions

Summary

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Want More?

- Reach out on my speaker page
- Ask a question on my class page
- Leave a comment on page
- Like/Recommend my class



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The background of the slide features four abstract, dark gray, three-dimensional geometric shapes in the corners. These shapes resemble stylized, faceted crystals or architectural elements, each with sharp edges and reflective surfaces that catch the light, creating bright highlights and deep shadows. They are positioned in the top-left, top-right, bottom-left, and bottom-right corners, framing the central text.

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